

WHAT IS CLAIMED IS:

1. A filter element wherein a plurality of successive layers of filter media follow one another in a direction of flow through the filter; all the individual layers consist of synthetic fibers; the successive filter media layers exhibit respective degrees of filter fineness that increase in the direction of flow through the filter, and at least one filter media layer arranged on an inflow side is composed of a meltblown nonwoven web.

2. A filter element according to claim 1, wherein said synthetic fibers are polyester fibers.

3. A filter element according to claim 1, wherein the meltblown nonwoven web is made of polyester fibers.

4. A filter element according to claim 1, wherein the meltblown nonwoven web arranged on the inflow side is made of polyester fibers and has an area weight in the range from 10 to 150 g/m² and a thickness in the range from 0.05 to 0.8 mm.

5. A filter element according to claim 1, comprising three successive layers of filter media.

6. A filter element according to claim 5, wherein the center layer is composed of a polyester nonwoven web.

7. A filter element according to claim 6, wherein the polyester nonwoven web of said center layer has an area weight in the range from 15 to 150 g/m² and a thickness in the range from 0.05 to 1.0 mm.

8. A filter element according to claim 5, wherein the center layer is composed of a meltblown nonwoven web.

9. A filter element according to claim 8, wherein the meltblown nonwoven web of said center layer has an area weight in the range from 15 to 100 g/m² and a thickness in the range from 0.05 to 0.6 mm.

10. A filter element according to claim 5, wherein the filter layer arranged on the outflow side of the filter element is composed of a meltblown polyester nonwoven web.

11. A filter element according to claim 1, wherein the successive layers of filter media are folded into a star shape.

12. A filter element according to claim 11, wherein the successive layers of filter media are joined together by surface pressure during folding.

13. A filter element according to claim 1, wherein the successive layers of filter media are ultrasonically welded together.

14. A filter element according to claim 1, wherein the successive layers of filter media are joined together by a hot-melt adhesive bonding or spray adhesive bonding.

15. A method of filtering a fluid comprising passing said fluid in a flow direction through a filter element comprising a plurality of successive layers of filter media which follow one another in said flow direction; wherein all the individual layers consist of synthetic fibers; the successive filter media layers exhibit respective degrees of filter fineness that increase in the direction of flow through the filter, and at least one filter media layer arranged on an inflow side of the filter element consists of a meltblown nonwoven web.

16. A method according to claim 15, wherein said fluid is a gas.

17. A method according to claim 16, wherein said gas is intake air for an internal combustion engine.

18. A method according to claim 15, wherein said fluid is a liquid.

19. A method according to claim 18, wherein said liquid is selected from the group consisting of lubricating oils, hydraulic oils and liquid fuels.

Patent Cooperation Treaty